

IN THE CLAIMS:

1. (Previously Amended) A positioning system for use in adjusting the position of a workpiece, comprising:

a light source for directing a light beam onto the top surface of said workpiece;

and

a detector coupled to said light source for detecting the light beam received by said workpiece, and for processing a deviation direction and a deviation amount based on a positional relationship between an image of said light beam shifted on the surface of said workpiece and a predetermined reference image.
2. (Original) The system of claim 1, further comprising a holding means for releasably holding said workpiece and for vertically adjusting the position of said workpiece based on said deviation direction and said deviation amount.
3. (Previously Canceled).
4. (Original) The system of claim 1, wherein said detector is located above a normal axis associated with said workpiece.
5. (Previously Amended) The system of claim 1, wherein said light source comprises a laser diode.

6. (Original) The system of claim 1, wherein said detector comprises a photodiode camera.

7. (Currently Amended) A method for adjusting the vertical position of a workpiece, said method comprising the steps of:

transmitting a light beam onto the top surface of said workpiece at a predetermined angle relative to a normal axis associated with said workpiece;
detecting the light beam projected on the top surface of said workpiece;
detecting a lateral shift of said detected light beam on the top surface of said workpiece, said shift occurring as a result of a vertical translation of said top surface; and,
converting said detected lateral shift to a corresponding vertical distance using trigonometry.

8. (Original) The method of claim 7, further comprising the step of positioning said workpiece based on said converted vertical distance.

9. (Previously Amended) The method of claim 7, wherein the step of detecting said detected light beam further comprises the steps of:

monitoring a boundary of said detected light beam;
generating signals representing positions of said boundary; and,
evaluating said signals for determining a center point of said boundary.

10. (Previously Amended) A positioning system for use in adjusting the position of a workpiece, comprising:

a light generating means for projecting a light beam onto the top surface of said workpiece at a predetermined angle;

a video capturing means for detecting the light beam received on said workpiece and for converting said detected light beam into electrical signals; and

a computer means for processing a deviation direction and a deviation amount based on a positional relationship between an image of said detected light beam shifted on the surface of said workpiece and a predetermined reference image.

11. (Previously Amended) The system of claim 10, further comprising a means for releasably holding said workpiece in a substantially horizontal orientation and for moving said workpiece horizontally in an X-Y plane to a preselected position.

12. (Previously Canceled).

13. (Previously Amended) The system of claim 10, wherein said computer means determines a lateral shift direction and an amount of lateral displacement of said projected light beam with the surface of said workpiece.

14. (Previously Amended) The system of claim 10, wherein said light generating means comprises a laser diode.

15. (Original) The system of claim 10, wherein said video capturing means comprises a photodiode camera.

16. (Original) A method for adjusting the vertical position of a workpiece, said method comprising the steps of:

projecting a first light beam onto the top surface of said workpiece to generate a first image;

projecting a second light beam onto the top surface of said workpiece to generate a second image;

using said first and second light beams to provide an indication of distance between said first and second images received by said workpiece; and,

adjusting the vertical position of said workpiece such that said first and second images coincide.